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EXAMINER

STEVENS, THOMAS H

ART UNIT PAPER NUMBER

2123

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. Claims 1,2, 6,7,9-12, 16,17, 19-52 were examined.

Section I: Allowance Rescinded/Reopening Prosecution

2. Applicants' representatives were contacted and an indication of allowability was discussed; however, upon further consultation and review, a new grounds of rejection is set forth below.

Section II: Non-Final Rejection

Claim Objections

3. Claim 9 is objected to because of the following informalities: Claim 9, line 7, suggested change from "stimulation" to -- simulation -- . Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2123

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2,6,7, 9-12, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al., (US Patent 6,292,765 (2001)) (hereafter Ho) in view of Raimi (US 5,604,895 (1997), hereafter Raimi) and in further view of Robertson et al., (US Patent 6,594,799, hereafter Robertson) and Burrows (US Patent 4,694,411, hereafter Burrows).

Ho teaches programmed computer simulations (title) while simulating first and second simulation (column 20, lines 24-34) behavior of a circuit (column 3, lines 30-33); but fails to teach a simulation portal with a simulation output file as well as a simulation engine.

Robertson teaches facilitating electronic circuits for chip design (title) in a portal (column 8, lines 30-35), while Raimi teaches a method of test coverage for electronic circuits (title) with simulation output files (column 16, lines 27-29) and Burrows teaches a method of simulating a network comprising a plurality of complex digital electronic circuits (abstract) with various simulation engines (column 10, lines 12-14).

All four are analogous art since they all teach circuit simulation.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the portal site of Robertson with the test vectors of Raimi and simulation engines of Burrows in the plurality of simulations of Ho

Art Unit: 2123

because Robertson teaches a method to make a wide variety of design and verification tools readily and conveniently available to design engineers, and to allow use of such tools without a large initial capital outlay in either software or hardware (Robertson: column 4, lines 52-56). Raimi teaches a method to increase coverage in a faster manner (Raimi: column 4, lines 62-64). Burrows teaches a method to assist in the design of a digital logic network (Burrows: column 1, lines 9-11).

Claim 1. A method for facilitating a collaborative design simulation between a first simulation engine and at least a second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14), wherein said simulation engines are communicatively coupled together with a simulation portal (Robertson: column 8, lines 21-35) over a computer network, said method comprising: creating said simulation portal (Robertson: column 8, lines 21-35) openly accessible to said first and second simulation (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) engines connected to said computer network; accepting a connection to said simulation portal (Robertson: column 8, lines 21-35) by each of said first simulation engine and said second simulation engine, (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) receiving a circuit design simulation output file at said portal from said first simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14); and providing said design simulation output file (Raimi: column 16, lines 27-29) from said simulation portal (Robertson: column 8, lines 21-35) upon request to at least said

Art Unit: 2123

second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14).

Claim 2. The method of claim 1 wherein said creating a simulation portal (Robertson: column 8, lines 21-35) step further comprises: creating said simulation portal using XML (Robertson: column 8, lines 16-20); and configuring said simulation portal (Robertson: column 8, lines 21-35) to allow connections from each of said simulation engines connected to said computer network .

Claim 6. The method of claim 1 further comprising managing design simulation output files for multiple simulations running contemporaneously (Inherent property of the Internet: Robertson: column 7, lines 47-57).

Claim 7. The method of claim 1 wherein said accepting a said connection step further comprises: verifying said connection with a username and password combination (Robertson: column 15, line 6).

Claim 9. A system for performing simulations wherein a first simulation engine and at least a second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) are communicatively coupled together with a simulation portal (Robertson: column 8, lines 21-35) over a computer network, said system comprising: means for creating said simulation portal (Robertson: column 8, lines 21-35); means for accepting

Art Unit: 2123

connections to said simulation portal (Robertson: column 8, lines 21-35) from each of said first simulation engine and said second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14); means for receiving at stimulation portal a one or more design simulation output files (Raimi: column 16, lines 27-29) from said first simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14); and means for providing said one or more design simulation output files (Raimi: column 16, lines 27-29) from said simulation portal (Robertson: column 8, lines 21-35) upon request to said second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14).

Claim 10. The system of claim 9 wherein said means for creating said simulation portal (Robertson: column 8, lines 21-35) include creating said simulation portal (Robertson: column 8, lines 21-35) in XML (Robertson: column 8, lines 16-20).

Claim 11. The system of claim 9 wherein said means for accepting connections includes verifying said connection with a username and password combination (Robertson: column 15, line 6).

Claim 12. A computer program product embodied on computer readable medium usable by a processor the medium having stored thereon a sequence of instructions which when executed by said processor causes said processor to execute a method for facilitating a collaborative design simulation between a first simulation engine and at

Art Unit: 2123

least a second simulation engine, wherein said first and said second simulation (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) engines are communicatively coupled with a simulation portal (Robertson: column 8, lines 21-35) over a computer network, said computer program product comprising: instructions for making said simulation portal (Robertson: column 8, lines 21-35) openly accessible to said simulation engines over said computer network; instructions for accepting a connection to said simulation portal (Robertson: column 8, lines 21-35) from each of said engine and said second simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14); instructions for receiving a circuit design simulation output file uploaded from at least said first simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14); and instructions for providing said design simulation output file (Raimi: column 16, lines 27-29) to at least said second simulation (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) engine upon request.

Claim 16. The computer program product of claim 12 further comprising instructions for managing design simulation output files for multiple simulations running contemporaneously (Inherent property of the Internet: Robertson: column 7, lines 47-57).

Claim 17. The computer program product of claim 12 wherein said instructions for accepting a said connection further comprise instructions for verifying said connection with a username and password combination (Robertson: column 15, line 6).

7. Claims 19-22 and 46-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson in view of Raimi.

Robertson teaches facilitating electronic circuits for chip design (title) in a portal (column 8, lines 30-35); but fails to teach simulation output files. Raimi teaches a method of test coverage for electronic circuits (title) with simulation output files (column 16, lines 27-29).

Robertson and Raimi are analogous art since they both teach electronic circuits.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the test vectors of Raimi in the portal site of Robertson because Raimi teaches a method to increase coverage in a faster manner (Raimi: column 4, lines 62-64).

Claim 19. A method for optimizing the components in a system design comprising: creating a simulation portal (Robertson: column 8, lines 21-35) that is openly accessible over a computer network; accepting a connection to said simulation portal (Robertson: column 8, lines 21-35) from each of a plurality of design teams communicatively coupled together with said simulation portal (Robertson: column 8, lines 21-35) over said computer network; receiving a circuit design simulation output file (Raimi: column 16, lines 27-29) at said portal from at least one of said plurality of design teams connected to said simulation portal (Robertson: column 8, lines 21-35); providing at least one of said simulation output files from said simulation portal (Robertson: column 8, lines 21-35) to at least one other of said design teams connected to said simulation

portal (Robertson: column 8, lines 21-35); and selecting the optimal components for said system desire based on a comparison of said design simulation output files (Raimi: column 16, lines 27-29).

Claim 20. The method of claim 19 wherein accepting said a connection step further comprises verifying said connection with a username and password combination (Robertson: column 15, line 6).

Claim 21. The method of claim 19 wherein said desire teams are not connected to the simulation portal (Robertson: column 8, lines 21-35) at the same time.

Claim 22. The method of claim 19, further comprising terminating (Note: examiner claims this inherent: if secure members a have the ability to log on, the opposite is true) said connection to said simulation portal (Robertson: column 8, lines 21-35) from any of said plurality of design teams upon request.

Claim 46. A circuit design simulation system comprising: a portal, (Robertson: abstract, lines 4-6) comprising a storage area to store data (" multiple databases; "Robertson: column 8, lines 36-61) used in with each of a plurality of design simulations; and a plurality of simulation engine in communication with the portal, the plurality of simulation engines able to send design simulation output files (Raimi: column 16, lines 27-29) to

Art Unit: 2123

the portal and able to receive any of the design simulation output files (Raimi: column 16, lines 27-29) from the portal.

Claim 47. The system of claim 46, wherein the plurality of simulation engines are not in communication (Inherent: “unplug or disconnect the device”) with the portal at the same time.

Claim 48. The system of claim 46, wherein the communications with the portal uses XML (Robertson: column 8, lines 16-20).

Claim 49. The system of claim 46, wherein the communications with the portal (Robertson: column 6, line 40) requires the verification of a username and password combination (Robertson: column 15, line 6).

Claim 50. The system of claim 46, wherein the stored data includes a synchronization (standard network communication function) file to allow simulation engines participating in the design simulation to match timing steps.

Claim 51. The method of claim 46, wherein the synchronization (standard network communication function) files is updated by each simulation engine as it simulates.

Art Unit: 2123

8. Claims 23-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burrows in view of and in further view of Robertson and Berry et al., "Toward Automatic State Management for Dynamic Web Services" 1999 (hereafter Berry).

Burrows teaches a method of simulating a network comprising a plurality of complex digital electronic circuits (abstract) with various simulation engines (column 10, lines 12-14); but fails to teach a plurality of design simulations and creating a dynamic portal.

Robertson teaches facilitating electronic circuits for chip design (title) in a portal (column 8, lines 30-35), while Berry teaches creating a portal dynamically.

All three are analogous art since they teach data storage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the portal site of Robertson and the dynamic web service of Berry in the simulation engines of Burrows of because. Robertson teaches a method to make a wide variety of design and verification tools readily and conveniently available to design engineers, and to allow use of such tools without a large initial capital outlay in either software or hardware (Robertson: column 4, lines 52-56). Berry teaches a method to significantly improve scalability response times and consumed wide-area bandwidth for dynamic web services (Berry: pg. 10, right column, lines 15-17).

Art Unit: 2123

Claim 23. A simulation portal (Robertson: column 8, lines 21-35) comprising: a data storage repository, (" multiple databases; "Robertson: column 8, lines 36-61) capable of storing data for each of a plurality of design simulations, (Robertson: column 6, lines 37-40) a communications server, allowing a plurality of simulation engines (Burrows: column 10, lines 12-14) to connect to the portal and to participate in one or more of the plurality design of simulations (Robertson: column 6, lines 37-40); and a simulation controller (Robertson: column 8, lines 34-35 and column 6, lines 37-45), managing and synchronizing communications (standard network communication function) between the participating simulation engines, the portal being created dynamically (Berry: pg. 7, "Experience" section, 2nd paragraph to page 8, left column, 1st paragraph).

Claim 24. The portal of claim 23, wherein the simulation controller (Robertson: column 8, lines 34-35 and column 6, lines 37-45) manages simulation data for multiple design simulations running contemporaneously (Inherent property of the Internet: Robertson: column 7, lines 47-57).

Claim 25. The portal of claim 23, wherein the data includes a synchronization (standard network communication function) file to allow the participating simulation engines (Burrows: column 10, lines 12-14) to match timing steps, said data associated with each of the design simulations available to any simulation engine (Burrows: column 10, lines 12-14) participating in the design simulation.

Art Unit: 2123

Claim 26. The portal of claim 25, wherein the synchronization (standard network communication function) files is updated by each simulation engine (Burrows: column 10, lines 12-14) participating in the design simulation as it simulates.

Claim 27. The portal of claim 23, wherein the plurality of simulation engines (Burrows: column 10, lines 12-14) includes any web (Robertson: column 8, lines 30-31) enabled engine.

Claim 28. The portal of claim 23, wherein the simulation controller (Robertson: column 8, lines 34-35 and column 6, lines 37-45) verifies a username and password combination (Robertson: column 15, line 6).

Claim 29. The portal of claim 23, wherein the communication server allows each simulation engine to disconnect (Inherent: e.g., "pull the power cord") from the portal upon request.

Claim 30. The portal of claim 23, wherein the plurality of simulation engines (Burrows: column 10, lines 12-14) are not connected (Inherent: e.g., "pull the power cord") to the portal at the same time.

Art Unit: 2123

Claim 31. The portal of claim 23, wherein the portal is terminated dynamically (Berry: pg. 7, "Experience" section, 2nd paragraph to page 8, left column, 1st paragraph) by writing programming files and executing those files.

Claim 32. The portal of claim 23, wherein the programming files are written in XML (Robertson: column 8, lines 16-20).

Claim 33. The portal of claim 23, wherein the communications between the participating simulation engines and the portal uses XML (Robertson: column 8, lines 16-20).

Claim 34. The portal of claim 23, wherein the portal (Robertson: column 7, lines 33-34) is created by an entity not participating in the design simulation.

9. Claims 35-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burrows in view of Robertson and in further view of Berry and Raimi.

Burrow teaches a method of simulating a network comprising a plurality of complex digital electronic circuits (abstract) with various simulation engines (column 10, lines 12-14); but fails to teach a plurality of design simulations and creating a dynamic portal and simulation of output files.

Robertson teaches facilitating electronic circuits for chip design (title) in a portal (column 8, lines 30-35), while Berry and Raimi teach creating a portal dynamically and simulation of output files, respectively.

All four are analogous art since they teach data storage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the portal site of Robertson, the dynamic web service of Berry and the simulation output files of Raimi in the simulation engines of Burrows of because. Robertson teaches a method to make a wide variety of design and verification tools readily and conveniently available to design engineers, and to allow use of such tools without a large initial capital outlay in either software or hardware (Robertson: column 4, lines 52-56). Berry teaches a method to significantly improve scalability response times and consumed wide-area bandwidth for dynamic web services (Berry: pg. 10, right column, lines 15-17). Raimi teaches a method to increase coverage in a faster manner (Raimi: column 4, lines 62-64).

Claim 35. A method for conducting a collaborative design simulation of a circuit desired comprising: a) dynamically (Berry: pg. 7, "Experience" section, 2nd paragraph to page 8, left column, 1st paragraph) creating a portal, by writing programming files in XML (Robertson: column 8, lines 16-20) and executing those files; b) granting access to the portal to a plurality of simulation engine (Burrows: column 10, lines 12-14); c) receiving a circuit design simulation output file (Raimi: column 16, lines 27-29) associated with a first portion of the circuit designed from a first of said plurality of

simulation engines; d) storing the design simulation output file (Raimi: column 16, lines 27-29) in a storage area, said output file available to any of said plurality of simulation engines (Burrows: column 10, lines 12-14); e) sending the design simulation output file (Raimi: column 16, lines 27-29) to each of said plurality of simulation engines (Burrows: column 10, lines 12-14) upon request, at least a second of said plurality of simulation engines (Burrows: column 10, lines 12-14) performing a simulation for a second portion of the circuit design using the output file as output a) between team members; and f) repeating c) through e) until the circuit design has been simulated (Burrows: column 14, lines 2-4).

Claim 36. The method of claim 35, further comprising, g) terminating the portal by executing one or more XML (Robertson: column 8, lines 16-20) statements.

Claim 37. The method of claim 35, wherein the storage area ("multiple databases; "Robertson: column 8, lines 36-61) includes a synchronization (standard network communication function) file associated with the design simulation to allow participating simulation engines to match timing steps.

Claim 38. The method of claim 37, wherein the synchronization (standard network communication function) file is updated by each simulation engine (Burrows: column 10, lines 12-14) as it simulates.

Art Unit: 2123

Claim 39. The method of claim 35, wherein each simulation engine(Burrows: column 10, lines 12-14) terminates access (users signs off) to the portal after its output file is received.

Claim 40. The method of claim 35, wherein the portal (Robertson: column 6, line 40) is created by an entity not participating in the design simulation.

Claim 41. The method of claim 35, wherein the portal (Robertson: column 6, line 40) is created by an entity participating in the design simulation.

Claim 42. The method of claim 35, wherein granting access to the portal) comprises verifying a username and password combination (Robertson: column 15, line 6).

Claim 43. The method of claim 35, wherein the simulation output file includes an industry standard (industry standard is thus well-known) output format.

Claim 44. The method of claim 35, wherein the design simulation output file (Raimi: column 16, lines 27-29) includes a vendor specific output file format.

Claim 45. The method of claim 35, wherein receiving the design simulation output file (Raimi: column 16, lines 27-29) includes receiving design output files from multiple design simulations running contemporaneously (Inherent by nature of the Internet: Robertson: column 7, lines 47-57).

10. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson in Berry in further view of Ho.

Robertson teaches facilitating electronic circuits for chip design (title) in a portal (column 8, lines 30-35) in a storage area (column 8, lines 36-61); but fails to teach a first and second simulation engine. Burrows teaches a method of simulating a network comprising a plurality of complex digital electronic circuits (abstract) with various simulation engines (column 10, lines 12-14), while Ho teaches programmed computer simulations (title) while simulating first and second simulation (column 20, lines 24-34) behavior of a circuit (column 3, lines 30-33).

All three are analogous since they teach circuit simulation.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize simulation engines of Burrows in the plurality of simulations of Ho in the portal site of Robertson because Burrows teaches a method to assist in the design of a digital logic network (Burrows: column 1, lines 9-11) and Ho teaches a method that flags behaviors of the portions in the conformance with known defective behaviors (Ho: column 4, lines 64-66).

Claim 52. A circuit design simulation system comprising: a portal, (Robertson: column 6, line 40) comprising a storage area to store (" multiple databases; "Robertson: column 8, lines 36-61) data for use in a plurality of simulations; a plurality of web-enabled simulation engines in communication with the portal, the web-enabled simulation engines being in communication with each other so that a circuit design simulation

output file generated by a first simulation engine (Ho: column 20, lines 24-34 and Burrows: column 10, lines 12-14) can be sent as a circuit design input file to a second simulation engine.

Response to Arguments

112 1st

11. Applicants are thanked for responding to this issue. Rejection is withdrawn.

Robertson Reference

12. Applicants state the Robertson reference does not disclose or suggest why (or how) communications between engines should or could be implemented. The applicants have not pointed to any specific claim denoting this issue. However, this office action addresses the portal and simulation engines by way of the combination of art by Robertson (portals) and Burrows (simulation engine).

Correspondence Information

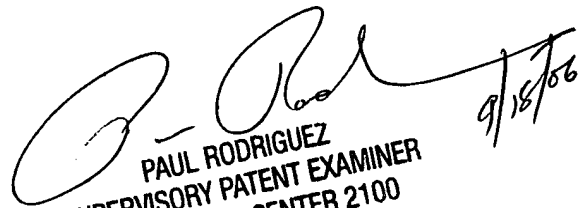
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2123

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